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International Specialists in the Environment

MEMORANDUM

DATE: October 5, 1988

TO: John Osborn, FIT-RPO, EPA, Region X

FROM: Jeffrey Villnow, FIT-OM, E&E, Seattle JV

SUBJ: Response to Monsanto Chemical Company Comments Regarding the FIT Site Inspection Report-Monsanto Chemical Co. Soda Springs, Idaho

REF: TDD F10-8702-06
PAN: FID0024SC

CC: William Glasser, Superfund Site Manager
David Bennett, NPL Coordinator

The following paragraphs document E&E's response to Monsanto Chemical Company's comments regarding the subject Site Inspection Report prepared by the Region X FIT. For clarity, Monsanto's comments are reproduced in their entirety following E&E's responses. Additionally, attached are 3 copies of the revised report text in its entirety. The revisions did not result in any changes to the HRS score or site inspection recommendations.

Page 1

No response.

Page 2, Paragraphs 1-2

No response.

Page 2, Paragraph 3

Little reference, if any, to the Golder Report was made in E&E's site inspection report due to the claim of confidentiality made by Monsanto regarding Golder and Associates' work. This claim also influenced the format and content of E&E's summary of the work as presented in the site inspection report. E&E acknowledges that substantial environmental studies have been undertaken at the site through Monsanto's initiative. However, no effort will be undertaken at this time to revise E&E's description of the completeness of Monsanto assessment or remedial efforts.

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Page 2, Paragraph 4

Shifting EPA priorities and needs required that E&E's original Project Manager for the Monsanto inspection be reassigned to other high priority work. This individual was available for consultation throughout the project and directly contributed to the final report.

Given the budget and schedule constraints of typical EPA site inspection activities, detailed characterization of facility processes is seldom possible. Rather, E&E attempts to summarize process descriptions for EPA and focus on issues related to potential NPL listing. E&E appreciates any opportunity to correct plant and process description inaccuracies that may result during interpretation of field notes or review of other site-related data. Such corrections, as noted by Monsanto in later sections of their comments, have been made in the final site inspection report.

Page 2, Paragraph 5

No response.

Page 2, Point 1

Spelling errors and alleged improper word usage in the report have been corrected.

Page 2, Point 2

The report production and review process used by E&E is dictated by EPA policy. E&E's assessment of the Monsanto Soda Springs site was conducted in accordance with EPA pre-remedial program policies and procedures. The final report accurately addresses objectives and data needs of the program.

Page 3, Abstract

Samples collected during the Monsanto inspection were analyzed for total phosphorus, hydrolyzable phosphorus, and orthophosphate. The abstract and all other pertinent sections of the report were revised to reflect this more accurately.

The spelling of phosphorus (although reported in various dictionaries as both phosphorus and phosphorous) has been changed in the final report per Monsanto's comment.

Page 3, Comments regarding page 5 of the SI report

The report has been amended to reflect Monsanto's comments regarding the location of Bear Lake and the presence of associated terrace deposits.

Page 3, Comments regarding page 6 of the SI report

Pursuant to EPA's Hazard Ranking System (HRS) model, the direction of ground water flow is not considered when assessing potential contaminant receptors. The wells listed in Table 2, page 9, are located within a 3-mile radius of the site and were, therefore, used to evaluate the site's potential for inclusion on the NPL.

Page 3, Comments regarding page 10 of the SI report, through Page 5

The final site inspection report has been amended to reflect these comments.

Page 5, Comments regarding page 15 of the SI report

The statement that vanadium contamination is restricted to the site area is derived from Golder and Associates' report, as indicated in the first full paragraph on page 15. The statement in the abstract describing elevated vanadium in an off-site spring is derived from E&E's inspection results. There is consequently no conflict between the two statements.

Specific recommendations regarding the need for further action at the Monsanto site were not listed in the SI report in accordance with standard EPA policy. E&E recognizes the quality and extent of remedial actions undertaken by Monsanto to correct previous environmental concerns.

Page 5, Comments regarding page 28 of the SI report

Monsanto's effluent discharge is hydraulically connected to Soda Creek which is used for irrigation of approximately 4,300 acres. As such, the irrigated acreage can be used in an assessment of potential contaminant receptors under EPA's pre-remedial program. The relative volume of irrigation water contributed by Monsanto's effluent discharge is not considered during this type of assessment.

JV:csr

Jeff Villnow E+E
please direct chang
as appropriate
Than
Bill GLA

Monsanto

DETERGENT/MATERIAL DIVISIO

Monsanto Chemical Company
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Phone: (208) 547-3391

August 15, 1988

Mr. William J. Glasser
Superfund Response and Investigations
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Dear Mr. Glasser:

The Site Inspection Report of the Monsanto Chemical Company, Soda Springs facility, has been reviewed. We wish to make the following general and specific comments concerning the investigation performed by your contractor Ecology and Environment, Inc. (E&E), and the report.

General Comments:

The purpose of this CERCLA inspection was to determine if impact to the environment, over the history of operation, is significant enough to list the facility as a site for Superfund remediation work. Coordination for the inspection began in February, 1987 and in March, 1987 an initial site visit was made by Jeffery Whidden, Project Manager and George Brooks, a new employee of Ecology and Environment, Inc., the EPA contractors.

During the initial visit, reference was made to the comprehensive groundwater investigation that had just been completed at the Monsanto site by Golder Associates, Inc. The scope and the information available in this work was very similar to the type of information critical to make a Superfund assessment of the facility. The Golder Report was requested by Ecology and Environment to aid in assessing the Monsanto plant site. Rather than providing the contractors with the Golder Report at that time, a formal presentation of the report was made in Seattle by Monsanto, to critical EPA and Ecology and Environment personnel.

General Comments (Cont'd)

This approach was taken by Monsanto because of the nature of the report and the fact that not all of the findings of the report were conclusive, or pertinent to the investigation being performed by EPA. A complete copy of the Golder Report was provided at the time as well as details of how Monsanto had already began remedial action and was prepared to address additional concerns identified by the Golder study.

Monsanto also requested input during the drafting of the EPA site report. This was felt to be necessary due to the complexity of the operation at Soda Springs, and our desire to be assessed accurately and fairly. These requests were not granted.

As a result of the presentation and the completeness of the Golder Report, the strategy was made by EPA and Ecology and Environment to conduct a limited sampling program and do only enough to verify the Golder assessment data. This sampling was completed in November, 1987 and comprises the assessment report. Very little reference is made to the work completed by Monsanto and no effort is made to demonstrate the completeness of the assessment or the environmental remedial efforts taking place at the Soda Springs facility.

One possible reason for this is that Jeffery Whidden, the project manager who was active on the initial site inspection and during the sampling, was then transferred to other projects, and had little or no input on the assessment report. This is evident by the many errors found in the report text, and the inaccurate way that our process and plant site was described.

It is our understanding also that prior to issuing the report, it was thoroughly reviewed and screened by an EPA technical review committee for completeness and technical accuracy. Upon receiving the assessment report on June 15, 1988 the report was missing 4 pages of the 28 page text.

Additional more specific comments concerning the "assessment report" are as follows:

1. The report is full of inaccuracies, even to the extent of spelling errors and improper word usage.

2. Greater cooperation between EPA and its contractor and Monsanto plant people in terms of us being allowed to review rough drafts and comment on them would have resulted in a more accurate report. If this report is indicative of all such reports in the current study, there is serious cause for concern with respect to the final recommendations that will be forthcoming.

ECOLOGY AND ENVIRONMENT SITE INSPECTION REPORT
Detailed Comments

Abstract. Mention is made that, among other things, elevated levels of phosphorus, were detected in on-site monitoring wells. We presume that this is not elemental phosphorus but as phosphates. The report should so state. If it were as elemental phosphorus then it would be cause for significant concern. None of our sampling has shown elemental phosphorus.

Also, the spelling of phosphorus is not phosphorous. This error is made throughout the report.

Page 5. Bear Lake is approximately 40 miles from the Soda Springs facility. No evidence of terrace deposits relating to this lake are evident in the Soda Springs area.

Page 6. Reference is made that "the direction of the groundwater movement in the Soda Creek Basin is generally to the west-southwest." Many of the 22 domestic wells referenced in Table 2, Page 9 and the source for the Soda Springs municipal supply are located up-gradient and reflect no relationship to Monsanto activities.

Page 10. There are many inaccuracies in Section 9.0, Overview of Site Operation. This section would better be written as follows:

> "The MCC plant produces elemental phosphorus using electric arc furnaces. The phosphorus produced is shipped off site and used primarily in the manufacture of phosphoric acid which is a feedstock for numerous commercial and industrial products. A brief overview of the plant's operations from information obtained during the site inspection is presented below."
>
> "Phosphate ore, mined from the nearby Henry Mine, is stockpiled on site. The ore is prepared for use in the furnaces by nodulizing in a rotary kiln. In the nodulizing process, moisture and organics are removed, and the ore is agglomerated into stable nodules. The furnace feed consists of nodules, quartzite (silica rock) and coke. The coke and quartzite is dried, if necessary, prior to being fed to the furnaces. Coke supplies the carbon which chemically reduces the phosphate ore to elemental phosphorus at the high temperatures generated by the furnaces. Silica is added to yield the proper composition and flow properties to the resulting slag. In addition, naturally occurring iron in the ore combines with phosphorus to produce a smaller quantity of a slag-like material called ferrophosphorus."

"The furnace gases containing elemental phosphorus, carbon monoxide, and entrained dust from the furnace feed material, pass through a dust collector, which removes the particulates, then into a water spray condenser where the phosphorus is condensed into liquid form. The residual gas is predominantly carbon monoxide which is re-routed into the kiln as a supplemental fuel."

"The molten phosphorus is then settled to remove residual particulates. The sludge from this process is roasted to recover any remaining phosphorus. The elemental phosphorus is piped into rail tank cars for shipment and is always stored and transported under water to prevent exposure to oxygen which results in a violent oxidation reaction."

Page 11. In Table 3, the first item under Process/Waste Steam column should be "electrode seal water from furnaces" rather than "explosion seal water from furnaces."

In the same table, where ferrophos slag is mentioned, there is indication of no liner. The ferrophosphorus is stored on a concrete pad.

Also, in this table there is no mention made of one waste stream, the plant sanitary waste which goes to sanitary waste lagoons.

Page 13. The first sentence under Table 4 says that "the composition of the slag is dominantly calcium silicate." This should be "predominantly". The word dominantly is improper in this sentence.

The third paragraph down says that the dust from electrostatic precipitators is "sent to a baghouse where it is stored." This is incorrect. The dust is stockpiled on the ground.

In the fourth paragraph, it is incorrect to say that the phossy water has a "high phosphorus content." The phosphorus content in reality is quite low.

In that same paragraph, the last sentence related to the fate of phossy water is incorrect. It would better be stated: "All phossy waters are sent to the hydroclarifier for lime treatment to remove any residual elemental phosphorus. The phossy water surge pond is for surge capacity when the hydroclarifier is down."

In the fifth paragraph, first sentence, the work "explosion" should be replaced with "electrode."

The Last paragraph on page 13 and carrying on to page 14 should read: "The rotary kiln exhaust gas contains considerable particulate matter. A wet scrubber is used to remove these particulates. The resultant slurry is sent to a hydroclarifier for settling and then to a filter for dewatering. The excess water is recycled back to the wet scrubber. Occasionally, the underflow solids ponds are used for dewatering when the filter is down."

Page 15

A statement in the middle of this page about vanadium being restricted to the site area is in conflict with the abstract which stated that "elevated levels of selenium, vanadium and zinc were detected in an off-site spring."

One of the objectives of the E & E site inspection is stated to "determine if there is a need for further action at the site." At no place in the report is any recommendation given with respect to this objective. Monsanto has taken remedial action with respect to all indicated sources groundwater contamination and has taken steps to safeguard, both on-site and off-site, from any exposure to any constituents above drinking water standards. This action should obviate consideration of any further action at the site.

Page 28

Only a small portion of the water used to irrigate the 4,300 acres referenced originates from the Monsanto effluent discharge (non-contact cooling water) stream.

If we can be of any assistance in further clarifying our comments, or if we can provide input in the final drafting of the assessment report, please contact me at extension 234.

Sincerely,

Robert L. Geddes

R. L. Geddes
Environmental Engineer

RLG/jw